The Greening of Georgia

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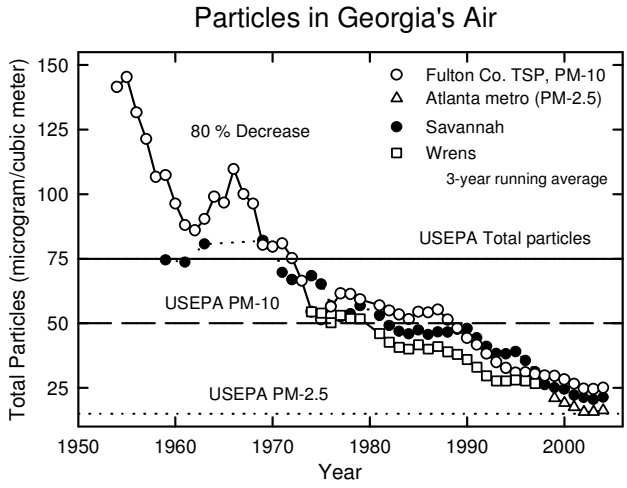
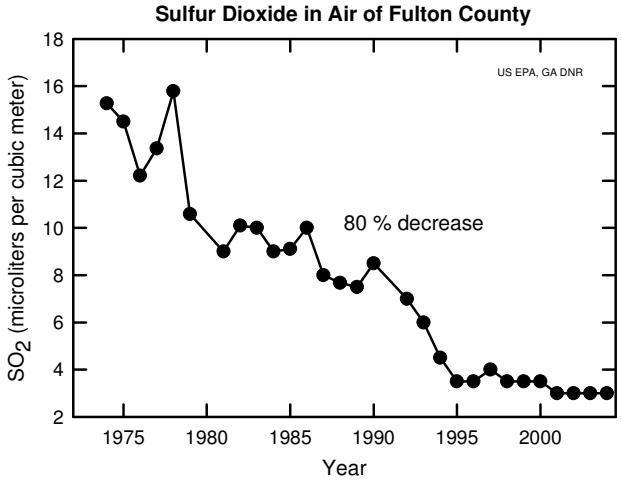
The Need for Good News – Georgians have a right to know how their environment has improved; is improving.

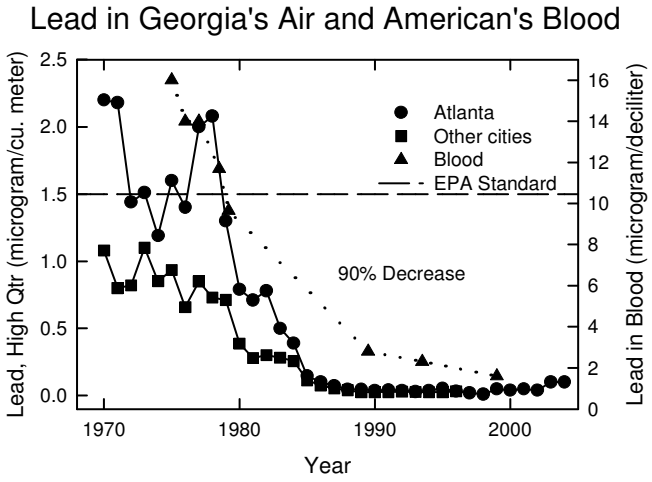
Clearing the Air

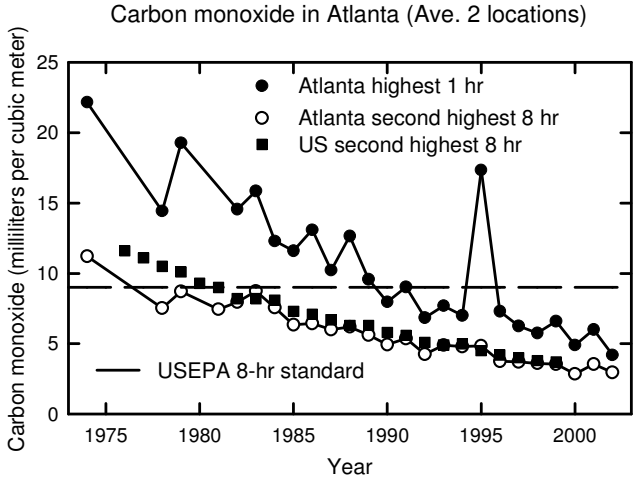
Particle pollution of the air has decreased all over Georgia; by 80 % in Fulton County. Even tiny particles are reduced 25 % since their first measurement in 1999 (See triangles, lower right corner). Sulfur dioxide is also down 80 % in Atlanta and rain has become less acid since the 1970s.



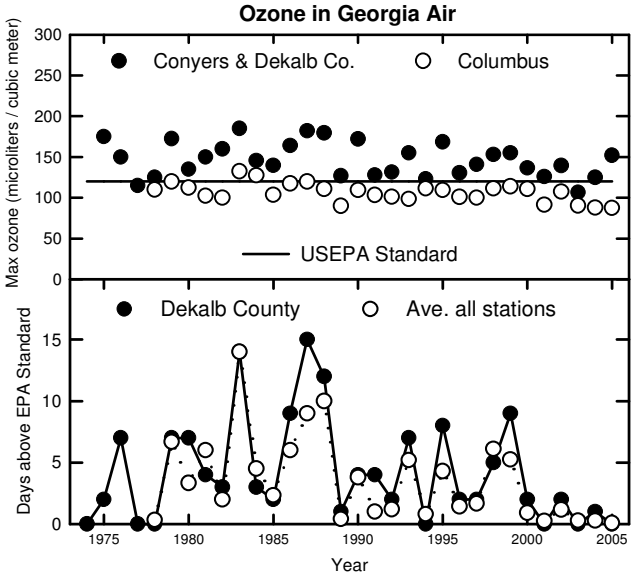


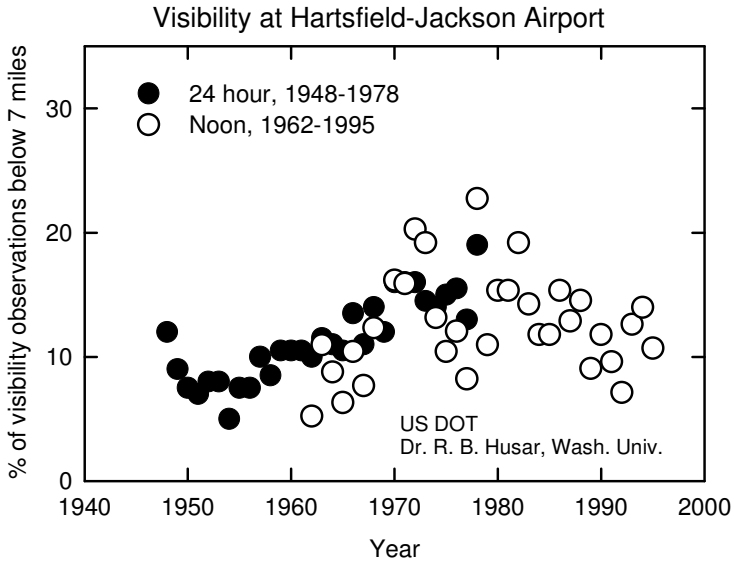
Lead in Georgia's air is down 98%; lead in the blood of Americans down 90%. Carbon monoxide in Atlanta's air decreased 60%.



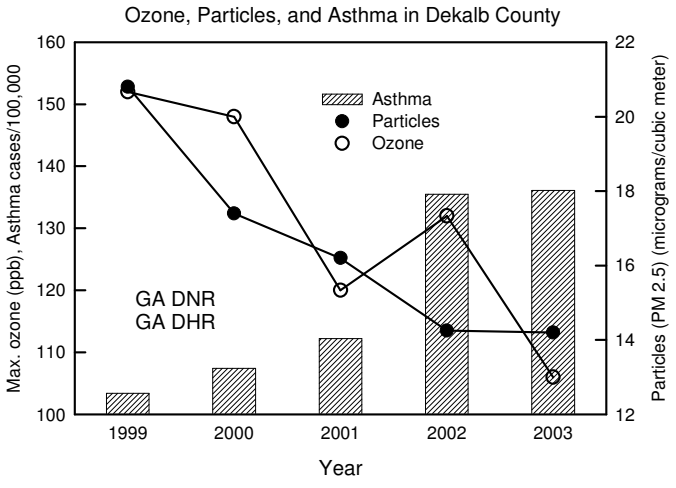


Ozone, the current pollutant of concern in Atlanta, hasn't gotten worse since the first measurements. The number of days above the 120 microliter per cubic meter EPA standard was lower in the last 6 years than any previous 6 consecutive years. Visibility at Atlanta's airport has improved since the 1970s.





Asthma and other diseases associated with polluted air, does not appear related to air pollution in Georgia. Asthma increased in Dekalb County from 1999-2003 as pollution was decreasing. The state average for asthma hospitalizations was 155 per 100,000 residents; all Atlanta metro counties were significantly below average. The counties with most asthma were rural.



ASTHMA IN GEORGIA (1999-2003)
Hospitalizations per 100,000 residents

Highest counties		Average	Metro ounties*	
Calhoun	418	155	Douglas	139
Dooly	373		Fulton	137
Pulaski	395		Dekalb	119
Seminole	360		Paulding	113
Cook	327		Clayton	107
Candler	326		Coweta	96
Berrien	314		Cobb	90
Wilcox	311		Henry	83
Lanier	304		Gwinnett	82
Laurens	289		Rockdale	75
Ben Hill	270		Cherokee	74
Tift	268		Forsyth	73
Screven	267		Fayette	45

*Ozone Non-Attainment area
From GA Dept Human Resources website

Air quality is still improving (graph above), partly due to power plant upgrades. According to the Atlanta Journal-Constitution (May 10, 2004) "…a $400 million upgrade at Plant Bowen in Cartersville completed last summer is equivalent to taking about 2.8 million cars off the road."

Soil Erosion The worst environmental disaster Georgia ever suffered was the washing away of its topsoil; the Piedmont lost an average of 7 inches. Streams and reservoirs all over the state became filled with sediment washed into them.

Conservation The good news is that soil erosion has been nearly stopped.

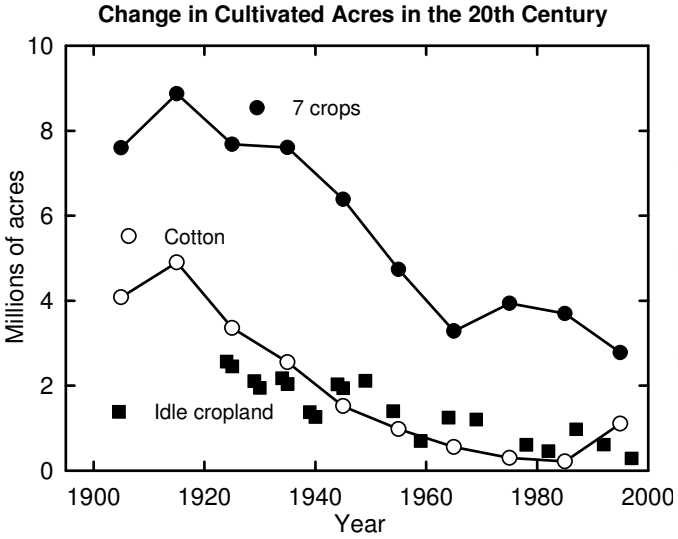
Reasons:

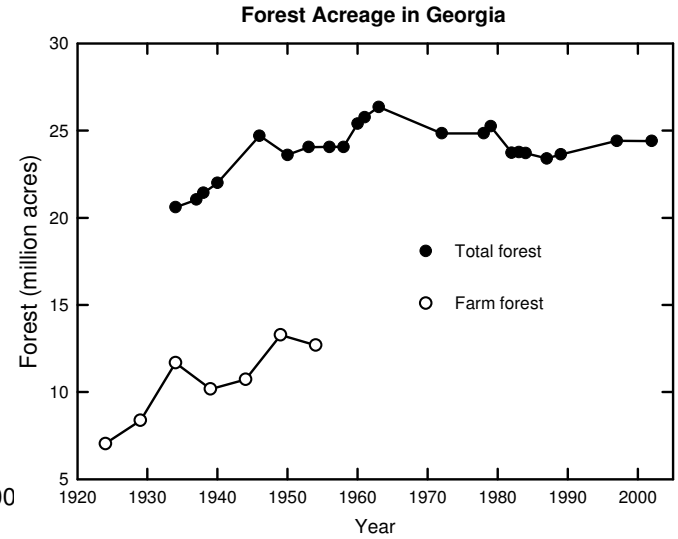
- Cultivated acres have dropped from nearly 10 million about 1910 to 3 million in 2000, replaced by non-erosive land uses.

- Conservation tillage is now as common as careless cultivation used to be.

Erosion on GA cultivated acres in 1992 = 5.5 tons/acre. GA urban erosion rate = zero. USDA, 1994.

Compared to sedimentation of Morgan Falls Lake near Roswell (1905-35), at 3-4 % per year, West Point Lake (1978-98) filled at only 0.02 % per year, Lake Allatoona (1949-98), 0.07 % per year.



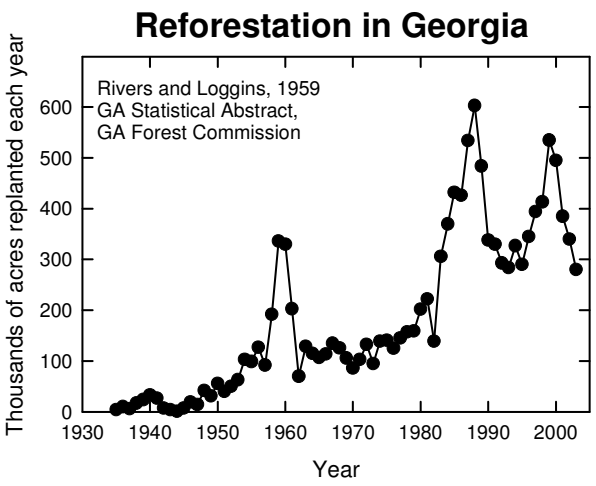


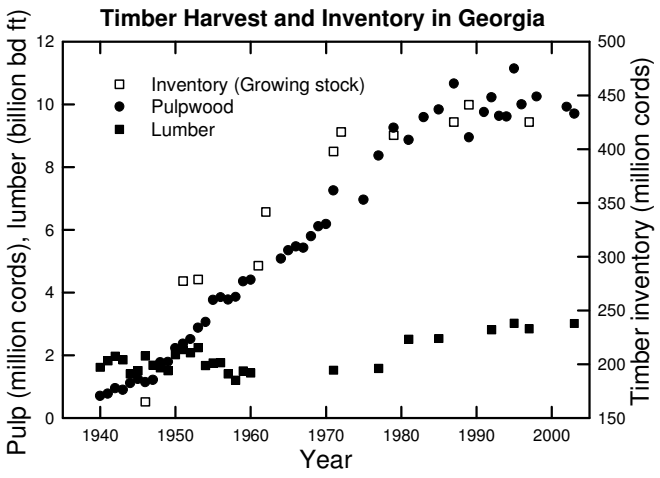
Reforestation

Georgia has 3 to 5 million more acres of forest than in the 1930s. Georgians planted almost no trees in the 1930s, an average of 400,000 acres per year since 1985. In the 1990s we produced 4 times as much wood per year and had twice the inventory of the 1930s.

Metro Atlanta Counties:

44 % forest in 1934; 49 % forest in 1997; 74 % covered with trees in 1990. In 1934, 37 % was cultivated; in 1989, 2.5 %.





Wetland Acres in Georgia

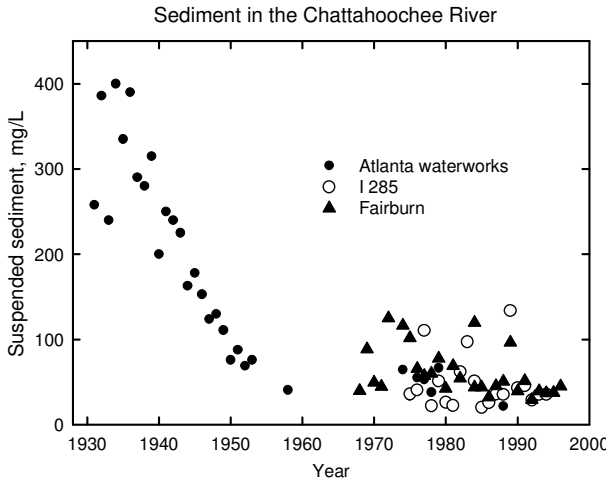
Acres of wetlands	Source
7,919,469	Barrows et al., 1917.
5,919,500(mid-1950s)	Shaw and Fredine, 1956
4,143,000	GA Soil Water Cons. Comm., 1981
5,444,597(mid-1950s)	Kundell and Woolf, 1986
5,298,000(mid-1970s)	Kundell and Woolf, 1986
3,513,789	Kundell and Woolf, 1986
4,831,300	Kundell and Woolf, 1986
7,496,100	NRCS Nat. Resources Inv. 1992
7,792,000(mid-1970s)	Hefner et al., 1994
7,714,000(mid-1980s)	Hefner et al., 1994
6,956,000	USDA, 1997
4,929,300	Ga. Dept. Nat. Resources, 1997

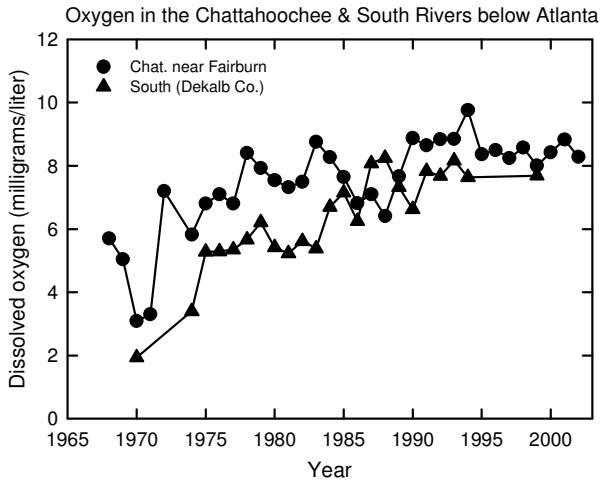
Wetlands

There is no discernible trend in wetland acreage in the 20th century, but they likely have increased. About 100,000 ponds and lakes have been built in the last 50 years. Beavers, nearly extinct in Georgia early in the century, have built hundreds of thousands of acres of wetlands since then. USDA, 1997 estimates GA had 1.6% more wetlands than in late 1700s.

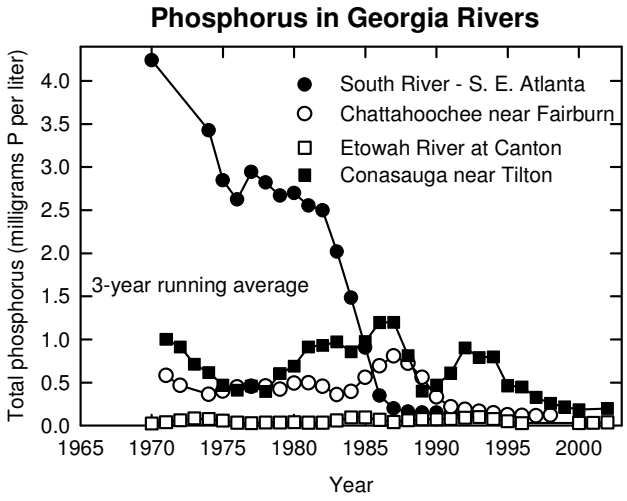
Cleaning the Water

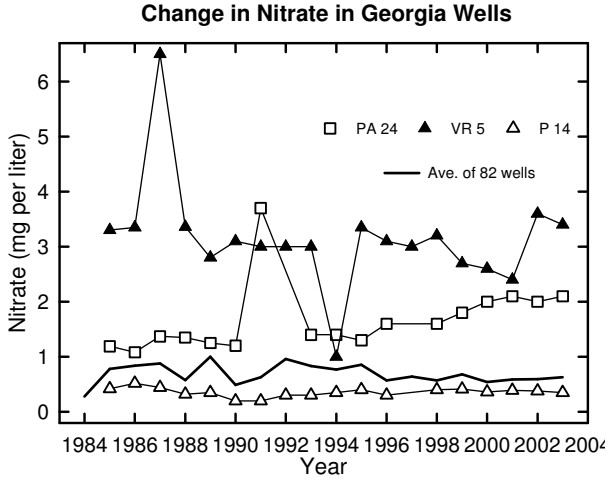
Sediment in the Chattahoochee River near Atlanta has decreased nearly 90 % since the 1930s. In the early 1960s, only 30 % of municipal sewage, and less than 5 % of industrial wastewater was treated; now all of it is. Fecal coliform bacteria have decreased 99+ % in the Chattahoochee south of Atlanta. Oxygen in the Chattahoochee and South Rivers increased 80 to 100% since the 1960s; fish have returned. The “water quality index” for 18 locations around Atlanta improved an average of 18 percent from 1986-89 to 1990-95.





Nutrient pollution of Georgia waters has decreased in the last three decades. Phosphorus is down in nearly all streams, but especially downstream of sewage treatment plants. Nitrogen is up in some streams, down in others. There is little evidence of contamination of groundwater by nitrates (see wells below), except in very localized instances.





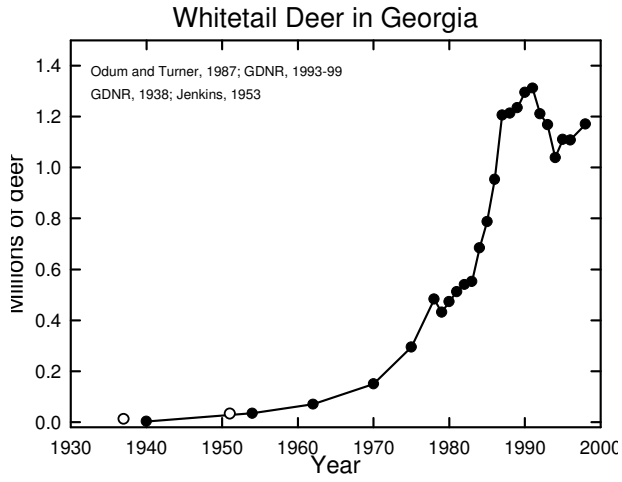
Mercury in Georgia's largemouth bass has decreased by 50 percent since 1970.

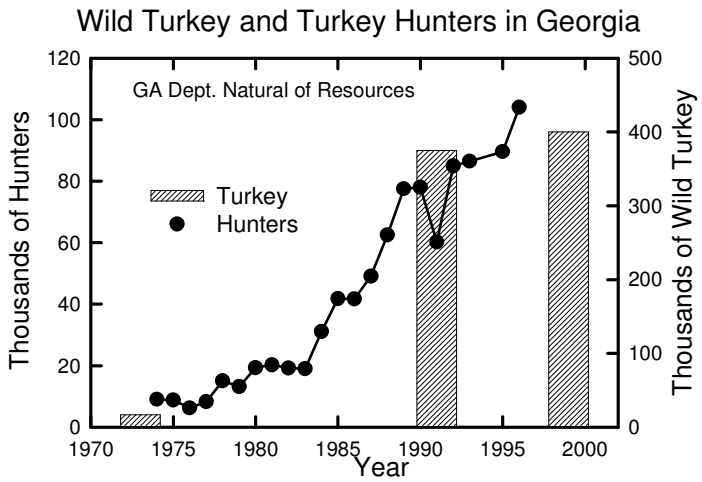
Mercury in Largemouth Bass in Georgia waters.

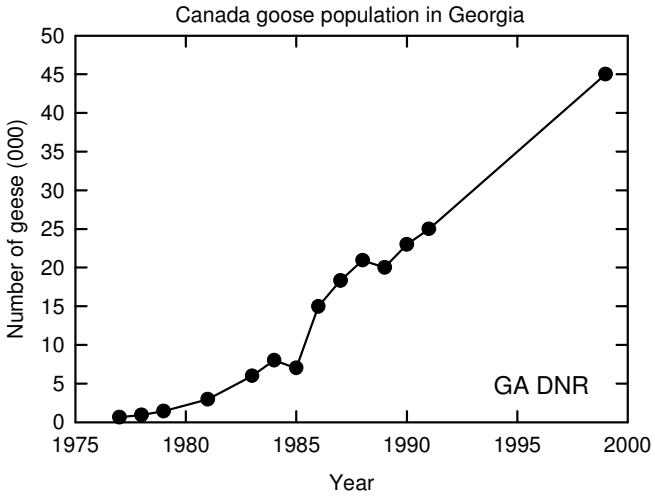
Location	1970-71	1991-97	% change	Location	1970-71	1991-97	% change
	Mg per kilogram				Mg per kilogram		
Savannah River (Aug. to Sav.)	1.55	0.29	-81	Lake Lanier	0.52	0.28	-46
Altamaha River (Everett)	0.74	0.24	-68	Lake Hartwell	0.42	0.24	-43
Ocmulgee River (US Hwy 280)	0.59	0.25	-58	Lake George	0.40	0.24	-40
Coosa River (Mayos Bar)	0.42	0.14	-67	Lake Sinclair	0.16	0.13	-19
Oconee River (Barnett Shoals)	0.41	0.23	-44	Lake Jackson	0.20	0.18	-10
Lake Allatoona	0.52	0.20	-61	Lake Blackshear	0.19	0.16	-16
Lake Harding	0.30	0.13	-60	Lake Seminole	0.26	0.29	+11
Lake Lanier	0.52	0.28	-46	Clarks Hill Lake	0.13	0.24	+85
Lake Hartwell	0.42	0.24	-43	Average	0.45	0.22	-51

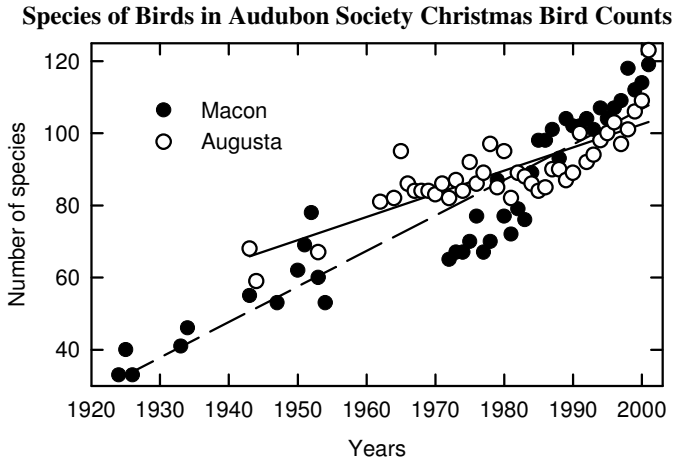
1970-71 GA Water Quality Control Board (1971), 1991-97 GA Dept. Natural Resources, 1998a.

Wildlife Deer have increased from nearly none in the 1930s to well over a million. DNR recently estimated 50,000 deer hit by cars every year, more than existed in GA before 1960.
The bald eagle, peregrine falcon, and alligator are removed from the endangered species list. Georgia has more wild turkey, bear, and beaver than in 100 years. Resident Canada geese increased from none in the 1970s to about 50,000 in 2000. First hunting season for alligator in 2003.









Songbirds: The numbers and diversity of birds in Georgia have risen throughout the 20th century. The Audubon Society Christmas Bird Counts recorded about 40 species at Macon in the 1920s and 1930s, almost 120 in 2000. US Fish and Wildlife Service Breeding Bird Survey shows Georgia has four times as many bluebirds as in 1966 and three times as many hawks.

Conclusion:

Georgia's environment is the best a century. Although there will always be problems to solve and resources to protect, we ought to at least acknowledge, if not celebrate, the Greening of Georgia.